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(54) Title: **LOW-K-DIELECTRIC MATERIAL**

(57) Abstract: Method for forming a low dielectric constant structure on a semiconductor substrate by CVD processing. The method comprises using a precursor containing chemical compound having the formula of (R1-R2)<sub>n</sub>-Si-(X1)<sub>4-n</sub>, wherein X1 is hydrogen, halogen, acyloxy, alkoxy or OH group, R2 is an optional group and comprises an aromatic group having 6 carbon atoms and R1 is a substituent at position 4 of R2 selected from an alkyl group having from 1 to 4 carbon atoms, an alkenyl group having from 2 to 5 carbon atoms, an alkynyl group having from 2 to 5 carbon atoms, Cl or F; n is an integer 1-3. The present precursors allow for a lowering of the electronic dielectric constant compared to conventional dielectric materials, such as silicon dioxide or phenyl modified organo-containing silicon dioxide.



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